Stoller
Grand Junction Office established 1959

50-09-01
Log Data Report

Borehole Information:

Borehole: 50-09-01 (299-W10-164)			Site: T Tank Farm		
Coordinates (Hanford)		GWL (ft)[1]: N/A[2]		GWL Date: N/A	
North	East	Drill Date	TOC[3] Elevation	Total Depth (ft)	Type
43493	-75785	Sep 1975	671.17	150	Cable Tool

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Schedule 40 See borehole notes	0.0	6 5/8	6	0.280	+0.0	96

The logging engineer measured the 6-in. casing using a steel tape. Measurements were rounded to the nearest 1/16 in. Casing thickness was based on published values for ASTM schedule-40 steel pipe.

Borehole Notes:

The borehole coordinates, elevation, and borehole depth information listed above are from *Hanford Wells* (Chamness and Merz 1993). Zero reference = top of casing. Top of casing is cut mostly even. The driller's log indicates the 6-in. casing was set at 148 ft, but pulled back to 88 ft. The driller's log also indicates the presence of 10-in. casing to 69 ft and 8-in. casing to 95.5 ft. Although this casing is not apparent at the ground surface, there is no indication that it was removed. The annular space between casings may have been grouted.

Logging Equipment Information:

Logging System:	Gamma 2F (NMLS)		Type: Neutron moisture gauge
Calibration Date:	11/13/2001	Calibration Reference:	GJO-2002-291-TAR
		Logging Procedure:	MAC-HGLP 1.6.5, Rev. 0

Neutron Moisture Logging System (NMLS) Log Run Information:

Log Run	1	2	3	4	5
Date	10/16/02	10/16/02			
Logging Engineer	Spatz	Spatz			
Start Depth (ft)	83.25	45.0			
Finish Depth (ft)	0.25	35.0			
Count Time (sec)	N/A	N/A			
Live/Real	R	R			
Shield (Y/N)	N/A	N/A			
MSA Interval (ft)	0.25	0.25			
ft/min	1 ft/min	1 ft/min			
Pre-Verification	BF013CAB	BF013CAB			
Start File	BF014000	BF014333			
Finish File	BF014332	BF014373			

Log Run	1	2	3	4	5
Post-Verification	BF014CAA	BF016CAA			
Depth Return Error (in.)	0	0			
Comments	No fine-gain adjustment.	No fine-gain adjustment.			

Logging Operation Notes:

Data were collected using Gamma 2, HO 68B-3572. The logging vehicle was set up facing north. A centralizer was installed on the sonde. NMLS pre-run and post-run verification spectra were collected at the beginning and end of each day.

Preliminary gross count plots were prepared in the field.

Analysis Notes:

Analyst:	McCain	Date:	10/22/02	Reference:	GJO-HGLP 1.6.3, Rev. 0

NMLS spectra were processed in batch mode using APTEC Supervisor to generate files of gross counts as a function of spectrum file name and depth. An EXCEL spreadsheet was used to prepare preliminary gross count plots and to calculate and plot gross count rates. Gross count rates for the verification spectra were within acceptance criteria. Because this log is part of a group of four boreholes with differing casing configurations, no attempt was made to calculate moisture content. The log plots are qualitative; the primary use is correlation. In general, increasing neutron count rates are indicative of increasing moisture content.

Log Plot Notes:

NMLS gross count rates are plotted as a function of depth, using EXCEL's graphing capabilities. Logs are plotted at a consistent depth and count rate scale to facilitate comparison and correlation.

Results and Interpretations:

The log for borehole 50-09-01 shows less variability than logs collected in nearby boreholes during the same logging campaign. Evaluation of spectral gamma logs collected during baseline characterization also suggests the presence of multiple casing strings. Therefore, the neutron log in this borehole should be evaluated with caution, because most of the response may be due to variations in casing and/or grout distribution in the annular space between casings.

References:

Chamness, M.A., and J.K. Merz, 1993. *Hanford Wells*, PNL-8800, prepared by Pacific Northwest Laboratory for the U.S. Department of Energy, Richland, Washington.

U.S. Department of Energy, 1999. *Hanford Tank Farms Vadose Zone, Tank Summary Data Report for Tank T-106*, GJ-HAN-120, prepared by MACTEC-ERS for the Grand Junction Office, Grand Junction, Colorado, June.

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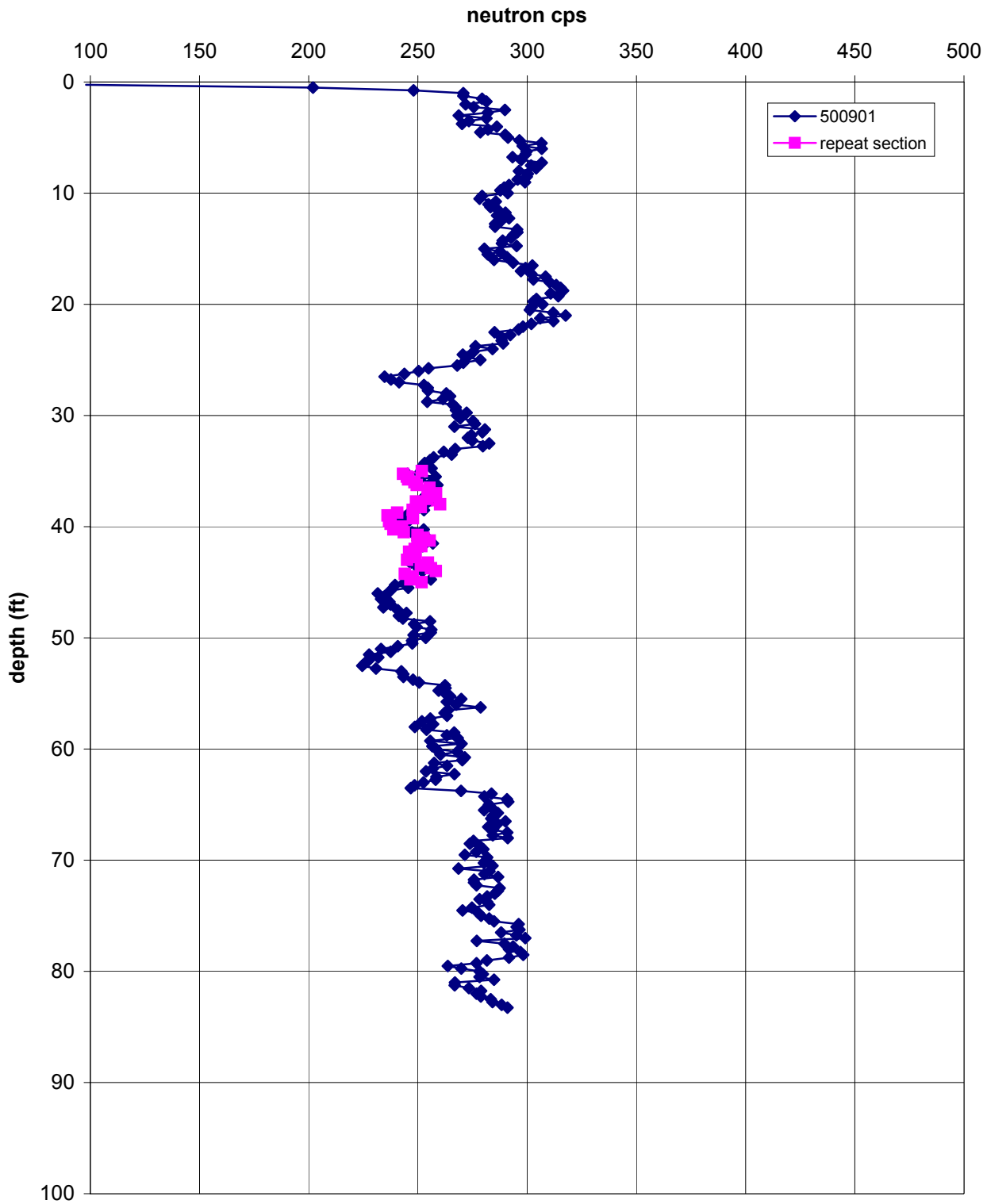
[1] GWL – groundwater level
[2] N/A – not applicable
[3] TOC – top of casing

50-09-01


neutron cps
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150
200
250
300
350
400
450
500
depth (ft)
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10
20
30
40
50
60
70
80
90
100
500901
repeat section